

Remarks

This paper represents Applicants' first opportunity to address the newly applied art noted in the final Office Action of November 25, 2008. Therefore, consideration of the Remarks presented below is respectfully requested.

Pending claims 8-20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Shiell et al. (U.S. Patent No. 6,119,222; hereinafter Shiell). This rejection is respectfully traversed for the reasons set forth below. Claims 8-20 remain pending in the application.

Initially, Applicants respectfully submit that the language of their recited independent claims 8 & 15 goes beyond the teachings and suggestions of Shiell. For example, in Applicants' independent claims 8 & 15, a request manager of the computer environment *receives a first request* from a requester. *This first request has associated with it metadata.* For an alleged teaching of this, the Office Action references FIG. 1 of Shiell, and in particular, element 306, which is labeled "input devices". Shiell teaches that input devices 306 may include a keyboard, a pointing device, and the interface circuitry therefore (column 4, lines 42-44). Applicants respectfully submit that this teaching of input devices in Shiell does not anticipate their recited invention wherein a first request is received from a requester, with the first request having associated metadata. There is no discussion of metadata *per se* in Shiell, nor is there any discussion that a request is received through input devices wherein metadata is associated with the request, let alone the particular metadata functioning as discussed further below, in accordance with Applicants' protocol.

Still further, Applicants' independent claims recite that the metadata *corresponds to data stored and maintained separately* from the metadata *by a data object manager of a storage subsystem* of the computer environment. For an alleged teaching of this aspect of Applicants' invention, the Office Action references column 2, lines 3-15 of Shiell. These lines state:

... A conventional branch target buffer, or BTB, is a cache-like table of entries that each store an identifier (a "tag") for recently-encountered branching instructions, a branch history-related code upon which prediction is made, and a target address of the next instruction to be fetched if the branch is predicted as taken (the next sequential address being the address to be fetched for a "not taken" prediction). When a block of instructions containing a branching instruction is fetched, its address is matched against

the tags in the BTB to determine if the block containing this instruction has been previously encountered; if so, the next fetch will correspond to the block of instructions indicated by the target address, dependent upon the prediction code indicated in the BTB for that instruction.

The branch target buffer (BTB) is noted in FIGS. 1 & 2 of Shiell as being within fetch unit 26 of the microprocessor 10. In view of this teaching, Applicants respectfully submit that one of ordinary skill in the art would not have been led to analogize the branch target buffer with a storage subsystem of the computer environment. A storage subsystem is conventionally, for example, disk storage, which would be analogous to disk system 308 in FIG. 1 of Shiell. As part of Applicants' storage subsystem, there is a data object manager. There is no data object manager expressly or inherently discussed with reference to the branch target buffer in the fetch unit of the processor in Shiell. Thus, Applicants respectfully submit that there is no teaching or suggestion in Shiell of *data being stored and maintained separately from the received metadata by a data object manager of a storage subsystem* of the computer environment.

In addition, Applicants recite that the metadata received with the first request is information about the data itself, *that is, the data which corresponds to the metadata that was received with the first request and which is stored and maintained separately from the metadata by the data object manager of the storage subsystem*. Applicants respectfully submit that there is no analogous teaching in Shiell of this protocol. The phrase "metadata" does not appear in Shiell, nor is there any discussion in Shiell of metadata being received with a first request that is associated with data that is maintained by a data object manager of a storage subsystem. If the "tag" in the branch target buffer of Shiell is being analogized to the metadata, there would fail to be any correlation or association between the metadata and the data stored and maintained separately from the metadata by the data object manager of the storage subsystem. In Applicants' invention, the metadata is information about the data itself. The tag in Shiell is a tag that is applied to the branch instruction that is placed into the buffer and would not relate to any data resulting from execution of the branch instruction. Thus, it is respectfully submitted that there is no analogy between Applicants' recited invention and the teachings of Shiell in this regard.

Applicants' independent claims further recite processing the metadata associated with the first request and *automatically informing by the request manager the data object manager* of an anticipated, second request to be subsequently received by the data object manager from the requester. Clearly, there is no express discussion of such a protocol in Shiell. There is no discussion of the requester sending the request, or any discussion of the request manager, or more importantly, of the data object manager of a storage subsystem of the computer environment. Thus, Applicants respectfully submit that their recited protocol wherein the metadata that is received associated with the first request is processed, and the request manager informs the data object manager of an anticipated, second request that will subsequently be received by the data object manager from the requester would not have been taught or suggested to one of ordinary skill in the art based upon Shiell. In this regard, the Office Action references column 2, lines 3-22, wherein a consecutive instruction can be predicted based on the instructions stored in the branch target buffer. However, this prediction of a consecutive instruction does not teach the protocol of Applicants' invention, wherein the request manager forwards to the data object manager information which tells the data object manager of the anticipated, second request to be subsequently received by the data object manager from the requester. There is no subsequently received request or instruction in Shiell, but rather, the consecutive instruction would already be resident in the processor.

Further, in Applicants' recited invention, *the data object manager of the storage subsystem prepares* for the anticipated, second request prior to receipt thereof by the data object manager. This again is distinct from the protocol of Shiell wherein a consecutive instruction is known from the historical information saved in the branch target buffer. The Office Action notes that the prediction metadata is accessed and analyzed prior to execution of the consecutive instruction/request. Without acquiescing to this characterization of Shiell, Applicants respectfully submit that there is no discussion in Shiell that the metadata associated with the first request is processed and then that the request manager automatically informs the data object manager of the anticipated, second request to be subsequently received by the data object manager from the requester.


For at least the above-noted reasons, Applicants respectfully submit that independent claims 8 & 15 patentably distinguish over Shiell. Reconsideration of the rejection based thereon is therefore respectfully requested.

The dependent claims are believed allowable for the same reasons as the independent claims, as well as for their own additional characterizations.

All claims are believed to be in condition for allowance, and such action is respectfully requested.

Should the Examiner have any reservation about the patentability of the claims presented, however, Applicants' undersigned representative respectfully requests an opportunity for an Examiner Interview to discuss the claims in the hope of advancing prosecution of this application.

Respectfully submitted,


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